

REMARKS

Upon entry of the foregoing amendments, claims 1-5, 8-11, 13-15, 17-20, 24-26 and 35-36, are pending and under consideration. Claim 1 has been amended to incorporate the subject matter of claim 12. Accordingly claim 12 has been canceled. Claims 6-7, 16, 21-23 and 29 have been previously canceled and claims 27-28 and 30-34 have been previously withdrawn. Accordingly, no new matter has been added by the amendments filed herein.

In view of the following remarks, the Examiner is requested to withdraw the rejection and allow claims 1-5, 8-11, 13-15, 17-20, 24-26 and 35-36, the only claims pending and currently under examination in this application after entry of the above amendments.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 19, 24-26 and 35-36 remain rejected under 35 U.S.C. § 102(b) as being anticipated by Uetani et al. (Uetani) (U.S. Patent Application Publication No. 2001/0026905)

Claim 19 and the claims dependent thereon are directed to a method of producing an adhesive composition having improved adhesive characteristics for use in bonding a ceramic material to a manufacturing tool, comprising adding a solvent to a novolac resin, wherein the solvent has a boiling point in the range of about 30° C to about 70° C, in a manner sufficient to produce said adhesive composition with improved adhesive characteristics, wherein the composition ***consists essentially of*** the novolac resin and the solvent.

As presented in the previous response, the methods now require an adhesive composition that ***consists essentially of*** a novolac resin and the solvent. As such, an element of claim 19 and the claims dependent therefrom, is the production of an adhesive composition that does not require any additional components other than 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C. In other words, other than the novolac resin and solvent, the adhesive compositions do not include any additional materials which materially affect the basic and novel characteristics as claimed.

In maintaining the present rejection, the Office alleges that the composition taught by Uetani also consists essentially of a novolac resin and a solvent, i.e., acetone. The Office goes on to assert that the radiation-sensitive quinonediazide compound and the thioxanthone compound in Uetani's compositions have not been shown to be material.

According to the Office Action, the Examiner asserts the following:

“However, applicant has not shown that these two compounds would materially change the characteristics of applicants invention.” (Office Action, p. 4).

In response, Applicants submit below paragraph [0002] of Uetani’s disclosure.

[0002] The fine processing of semiconductor integrated circuit has usually been performed by adopting a lithography process using a resist composition. Among the resist composition, positive working types are used in many cases because of their generally superior resolution. The positive resist compositions comprise generally an alkali-soluble ingredient and a radiation-sensitive ingredient. Specifically, they comprise a novolac resin as an alkali-soluble ingredient and a quinonediazide compound as a radiation-sensitive ingredient. Such a novolac-quinonediazide type positive resist utilizes the fact that the quinonediazide compound, which is alkali-insoluble, is decomposed by the action of radiation to generate a carboxylic group, which makes the compound alkali-soluble.

According to Uetani, the quinonediazide compound is the radiation-sensitive ingredient and such compositions “utilize the fact that the quinonediazide compound, which is alkali-insoluble, is decomposed by the action of radiation to generate a carboxylic group, which makes the compound alkali-soluble.” As such, the quinonediazide compound is not only a required feature of Uetani’s composition but a material element as well.

Therefore, Uetani’s composition, which requires a novolac resin and a radiation sensitive quinonediazide compound, cannot be equated to the present claims. Uetani does not teach every element of the rejected claims, namely, a method of producing an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C. Therefore, Uetani is not anticipatory because the reference fails to teach a method of producing an adhesive composition in which the composition **consists essentially** of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in present claim 19. Consequently, Applicants respectfully request that this rejection may be withdrawn.

Claims 19, 24--26 and 35-36 remain rejected under 35 U.S.C. § 102(b) as being anticipated by Teiichi et al. (Teiichi) (WO 01/60938 with U.S. Patent Application Publication No. 2001/0026905 used as a translation)

As set forth above, claim 19 and the claims dependent therefrom are directed to a method of producing an adhesive composition having improved adhesive characteristics for use in bonding a ceramic material to a manufacturing tool, comprising adding a solvent to a novolac resin, wherein the solvent has a boiling point in the range of about 30° C to about 70° C, in a manner sufficient to produce said adhesive composition with improved adhesive characteristics, wherein the composition ***consists essentially*** of the novolac resin and the solvent.

The Office, in maintaining the rejection, asserts that Teiichi teaches “an epoxy adhesive resin and adding a solvent thereto... the solvent consist of acetone” (Office Action, P. 5).

Applicants contend that Teiichi is not anticipatory because the reference fails to teach methods of producing an adhesive composition in which the composition consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in present claim 19. In other words, Teiichi teaches a composition that in addition to the novolac resin and solvent, includes additional materials which materially affect the basic and novel characteristics of the compositions.

The compositions described in Teiichi requires the addition of a curing agent. According to Teiichi’s disclosure:

“The process for producing an adhesive composition of the present invention is characterized in that it comprises mixing (a) an epoxy resin with (b) a curing agent and (d) a filler, and then, mixing the resultant mixture with (c) a polymer compound incompatible with the epoxy resin.” [para: 021]

Applicants provide paragraphs [0033] and [0038] of Teiichi’s disclosure below.

[0033] (a) The epoxy resin to be used in the present invention is not particularly limited as long as it is cured to exhibit an adhesive action. An epoxy resin having two or

[0038] (d) The curing agent to be used in the present invention is not particularly limited as long as it can cure an epoxy resin. Examples of such curing agents include poly-functional phenols, amines, imidazole compounds, acid anhydrides, organophosphorus compounds, and halides thereof, polyamide, polysulfide, and boron trifluoride.

In view of above, the adhesive action is a direct result of the curing process. Therefore, according to Teiichi, the curing agent is not only a required feature of Teiichi's composition but is a material element as well.

Therefore, Teiichi's composition, which requires the addition of a curing agent, cannot be equated to the present claims. Accordingly, Teiichi does not teach every element of the rejected claims, namely, a method of producing an adhesive composition in which the composition **consists essentially** of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C. Consequently, Teiichi does not anticipate the claimed invention and this rejection may be withdrawn.

Claims 19, 24--26 and 35-36 have been rejected under 35 U.S.C. § 102(b) as being anticipated by LeBlanc (LeBlanc) (U.S. Patent No. 3,582,516)

As set forth above, claim 19 and the claims dependent thereon are directed to a method of producing an adhesive composition having improved adhesive characteristics for use in bonding a ceramic material to a manufacturing tool, comprising adding a solvent to a novolac resin, wherein the solvent has a boiling point in the range of about 30° C to about 70° C, in a manner sufficient to produce said adhesive composition with improved adhesive characteristics, wherein the composition ***consists essentially*** of the novolac resin and the solvent.

LeBlanc is directed to epoxy novolac resins which are derived from reacting a haloepoxyalkane with a member of a particular class of phenol aldehyde novolac resin starting material. According to LeBlanc:

“...Utilizing these alkylated novolacs as starting materials, the desired epoxy resins are prepared by reacting a halo epoxyalkate (especially epichlorohydrin) with such starting novolac resins and then dehydrohalogenating.” (Col. 2, line 32-36).

LeBlanc further states:

“...The etherifying agent which introduces the epoxy groups into the above modified phenol-aldehyde novolacs is a haloepoxyalkane or a compound which produces a haloepoxyalkane under the reaction conditions.” (Col. 7, line 74- col. 8, line 2).

As such, LeBlanc’s resins require a haloepoxyalkane element to introduce the epoxy group into the novolac resin. In other words, LeBlanc teaches a composition that in addition to the novolac resin and solvent, includes additional materials which materially affect the basic and novel characteristics of the composition.

Therefore, LeBlanc’s composition, which requires the addition of a haloepoxyalkane, cannot be equated to the present claims. Accordingly, LeBlanc does not teach every element of the rejected claims, namely, a method of producing an adhesive composition in which the composition **consists essentially** of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C. Consequently, LeBlanc does not anticipate the claimed invention and this rejection may be withdrawn.

REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 15-19, 24-26, 35 and 36 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ruiz (Ruiz) (U.S. Patent No. 5,406,694) in view of LeBlanc (LeBlanc) (U.S. Patent No. 3,582,516) or Teiichi et al. (Teiichi) (WO 01/60938 with U.S. Patent Application Publication No. 2001/0026905 used as a translation)

Ruiz is directed to methods of fabricating thin-film magnetic recording heads, or sliders, which employ the step of slicing a wafer containing like-oriented transducers into chunks.

In making this rejection, the Office acknowledges that Ruiz is deficient in that it does not disclose the use of an adhesive that includes a solvent, in the first place, let alone a solvent that is debondable and includes a boiling point in the range of about 30° C to about 70° C. The Office, therefore, relies on LeBlanc or Teiichi to remedy this deficiency. Specifically, the Office asserts that it would be obvious to use the adhesive disclosed in LeBlanc or Teiichi in the process disclosed in Ruiz.

The Applicants respectfully disagree. Claim 15 is directed to a method of manufacturing a slider for a hard disk drive, wherein the adhesive is used to bond a ceramic material to a manufacturing tool, the improvement which comprises employing a de-bondable adhesive composition consisting essentially of a novolac resin and a solvent, wherein the solvent has a boiling point in the range of about 30°C to about 70°C.

As such, similar to claim 19 discussed above, the adhesive composition recited in the methods consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

Applicants submit that LeBlanc's composition, which requires the addition of a haloepoxyalkane and Teiichi's composition, which requires the addition of a curing agent, cannot be equated to the adhesive compositions of the present claims. Therefore, neither LeBlanc nor Teiichi teach or suggest every element of the rejected claims, namely, an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

The M.P.E.P. § 2143 provides clear guidance on the requirements which must be articulated by an Examiner to establish a *prima facie* case of obviousness. Firstly, the Examiner must articulate a finding that all of the claimed elements were known in the prior art. Second, that one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and thirdly, that the combination yielded nothing more than predictable results to one of ordinary skill in the art.

However, if any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art (MPEP *Id*).

As set forth below, Applicants submit that a *prima facie* case of obviousness has not been established because neither LeBlanc nor Teiichi teach or suggest every element of the rejected claims.

Therefore, because neither LeBlanc nor Teiichi teach or suggest the element of an adhesive composition as in the present claims, the reference provides no suggestion or

motivation to one of skill in the art to modify LeBlanc's compositions or Teiichi's compositions to arrive at the Applicants adhesive composition.

Further, although LeBlanc and Teiichi each provide exemplary data directed to various compositions, each composition specifically includes either a haloepoxyalkane or a curing agent.

Therefore, in contrast to the present application, the teachings of LeBlanc or Teiichi fail to provide any working examples of an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in the Applicants disclosure. Thus, Applicants submit that LeBlanc or Teiichi fail to provide the skilled artisan with a reasonable expectation that a composition as in the claims of the present application would be successful as an adhesive composition for manufacturing a slider. As such, outside of the Applicants' teachings, one of skill in the art would not reasonably expect that modifying LeBlanc or Teiichi's composition to arrive at the adhesive composition as presently claimed would be a successful adhesive composition for manufacturing a slider.

Therefore, neither LeBlanc nor Teiichi provide guidance for one of ordinary skill in the art to modify the teachings to include an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in the Applicants disclosure.

In view of the foregoing, the teachings of LeBlanc or Teiichi fail to make up for the deficiency of Ruiz. Therefore, in view of the above, a *prima facie* case of obviousness has not been established because Ruiz in combination with either LeBlanc's compositions or Teiichi's composition fails to teach or suggest each and every element of the instant invention, namely, the step of employing a de-bondable adhesive composition that **consists essentially** of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C in the manufacture of a slider for a hard disk drive. Accordingly, a *prima facie* case of obviousness has not been provided and this rejection may be withdrawn.

Claims 1, 5, 8-10 and 12-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ruiz (Ruiz) (U.S. Patent No. 5,406,694), LeBlanc (LeBlanc) (U.S. Patent No. 3,582,516 and Teiichi et al. (WO 01/60938 with U.S. Patent Application Publication No. 2001/0026905 used as a translation) as applied to claims 15-19, 24-26, 35 and 36 above, and further in view of Tanaka et al. (U.S. Patent No. 4,376,194)

Claim 1 is directed to a method of bonding a ceramic material to a manufacturing tool comprising providing a de-bondable adhesive composition consisting essentially of a novolac resin and a solvent, wherein the solvent has a boiling point in the range of about 30°C to about 80°C; placing the adhesive composition onto a surface of the ceramic material; and contacting the manufacturing tool with the adhesive composition on the surface of the ceramic material such that the tool and the ceramic material bond together; and subjecting the adhesive composition located between the tool and the ceramic material to conditions effective to substantially remove the solvent from the adhesive.

As such, similar to claims 19 and 15 discussed above, the adhesive composition recited in the methods of claim 1 ***consists essentially*** of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C. Therefore, Applicants submit that independent claim 1 and the claims dependent thereon are patentable over Ruiz, LeBlanc and Teiichi as discussed above.

As the Office cites Tanaka solely for reciting the steps of applying the adhesive to a first composition and then to a second composition and then subjecting the adhesive to conditions effective for removing the solvent, Tanaka fails to make up for the deficiency of Ruiz, LeBlanc and Teiichi. Accordingly, a *prima facie* case of obviousness has not been established and this rejection may be withdrawn.

Claim 11 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ruiz (Ruiz) (U.S. Patent No. 5,406,694), LeBlanc (LeBlanc) (U.S. Patent No. 3,582,516), Teiichi et al. (Teiichi) (WO 01/60938 with U.S. Patent Application Publication No. 2001/0026905 used as a translation) and Tanaka et al. (Tanaka) (U.S. Patent No. 4,376,194) as applied to claims 1-5, 8-10 and 12-14 above, and further in view of Schafer (Schafer) (U.S. Patent No. 5,421,884)

Claim 11 ultimately depends from independent claim 1. Accordingly, claim 11 includes all of the elements recited in independent claim 1 and is therefore patentable over Ruiz, LeBlanc,

Teiichi and Tanaka for at least the reasons discussed above. Specifically, none of the references, alone or in combination, recite a method of producing an adhesive composition that **consists essentially** of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

As the Office cites Schafer for disclosing a technique for removing solvent from an adhesive by applying vacuum and heat conditions, Schafer fails to make up for the deficiency of Ruiz, Teiichi and Tanaka. Therefore, a *prima facie* case of obviousness has not been established and this rejection may be withdrawn.

Claims 2-4 and 20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ruiz (Ruiz) (U.S. Patent No. 5,406,694), LeBlanc (LeBlanc) (U.S. Patent No. 3,582,516) and Teiichi et al. (Teiichi) (WO 01/60938 with U.S. Patent Application Publication No. 2001/0026905 used as a translation) as applied to claims 15-19, 24-26, 35 and 36 above or Ruiz, LeBlanc, Teiichi and Tanaka as applied to claims 1, 5, 8-10 and 12-14 above, and further in view of Brown (Brown) (U.S. Patent No. 6,265,015)

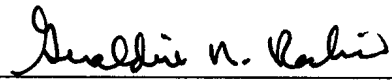
Claims 2, 4, and 20 ultimately depend from independent claim 1. Accordingly, claims 2, 4, and 20 are patentable over Ruiz, LeBlanc, Teiichi and Tanaka for at least the reasons discussed above. Specifically, none of the references, alone or in combination, recite a method of producing an adhesive composition that ***consists essentially*** of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

As the Office cites Brown for disclosing that the amount of solvent is determined as a function of desired viscosity, Brown fails to make up for the deficiency of Ruiz, LeBlanc, Teiichi and Tanaka. Therefore, a *prima facie* case of obviousness has not been established and this rejection may be withdrawn.

CONCLUSION

Applicants respectfully submit that the application is in condition for allowance and request an allowance for same. Please charge any fees due or credit any overpayment to the undersigned's Deposit Account No. 18-0580, Reference No. HSJ9-2003-218-US1.

Respectfully submitted,

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